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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,846	11/12/2003	Gregory B. Venema	4430-031234 (03-1257)	6084

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EXAMINER

MORILLO, JANELLE COMBS

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/706,846	<b>Applicant(s)</b> VENEMA ET AL.	
	<b>Examiner</b> Janelle Combs-Morillo	<b>Art Unit</b> 1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt, Jr et al (US 5, 221,377) in view of "ASM Vol. 4 Heat Treating" p 854.

Hunt teaches a heat treatable Al-Zn (7xxx series) alloy product processed by casting into an ingot (column 5 lines 54-56), working (such as rolling column 5 lines 43-44) and optionally machining (column 5 line 60) to achieve the desired shape- such as a plate (column 5 line 45), solution heat treating (column 5 lines 61-63), stretching (column 6 line 9), and aging (column 6 line 13). Hunt teaches the ingot is "worked (and sometimes machined) into a desired shape" (column 5 lines 59-60), and therefore is held to teach working combined (and followed by) machining.

"ASM Vol. 4 Heat Treating" further teaches motivation to machine prior to heat treatment. In particular, "ASM Vol. 4 Heat Treating" p 854 teaches-

"another approach to the minimization of residual stresses that is generally successful consists of rough machining to within 3.2 mm (0.125 in. ) or less of finish dimensions, heat treating, and then finish machining. This procedure is intended to reduce the cooling-rate differential between surface and center by reducing thickness; other benefits that accrue if this technique is used to reduce or reverse surface tension stresses in finished parts are improvements in strength, fatigue life, corrosion resistance, and reduced probability of stress-corrosion cracking."

Therefore, it would have been obvious to one of ordinary skill in the art to perform a step of machining to roughly finish dimensions, as taught by “ASM Vol. 4 Heat Treating”, for the process of forming a heat treatable aluminum alloy taught by Hunt, because “ASM Vol. 4 Heat Treating” teaches said machining prior to solution treating minimizes residual stresses and reduces the cooling rate differential between the surface and center thickness (“ASM Vol. 4 Heat Treating” p 854).

Concerning dependent claims 2-4, 13, and 14, as stated above, Hunt teaches said alloy is an aluminum alloy that is categorized as a 7xxx series type (see Hunt at abstract). Hunt also teaches machining to achieve a desired shape (column 5 line 60), substantially as presently claimed.

Concerning dependent claim 5, Hunt does not specify said alloy is in the “F” temper after rolling. Because the instant specification states that the F temper means the temper of the alloy as fabricated (see [0006]), and because Hunt teaches no additional heat treatment or working steps occur, the product taught by Hunt is also in a F temper after rolling.

Concerning dependent claims 6-8, Hunt teaches said steps are suitable for use in a variety of aircraft components, including wing components, wing box components, wing sections, fuselage sections, etc. (column 18 lines 50-53). Therefore the presently claimed skin and stiffening members in the wing panel is held to be within the disclosure of Hunt.

### ***Response to Arguments***

3. In the response filed on June 30, 2006 applicant submitted a 1.131 declaration and various arguments traversing the rejections of record.

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4. The declaration filed on June 30, 2006 under 37 CFR 1.131 is sufficient to overcome the Heymes et al (2005/0182483) reference.

5. Applicant's argument that the present invention is allowable over the prior art of record because the prior art does not teach or suggest providing a heat treated product by removing material from the product to achieve a shape near-net to a desired final shape, or that SAM teaches against machining prior to heat treatment, has not been found persuasive. Though ASM mentions quenching warpage can be detrimental in thin sections, p 855 continues to discuss the compromise in cost of machining to rough dimensions prior to quenching and finish machining vs. one step machining. Even though the cost of a double machining setup is higher, said process is beneficial for improvements in strength, fatigue life, corrosion resistance, and reduced stress corrosion cracking (p 854, 3<sup>rd</sup> column), and wherein thicker sections exhibit low quench warpage.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCM   
September 12, 2006

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700